

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 16 JUN 2005

|  |   |   |
|--|---|---|
| Applicant's or agent's file reference<br><b>Case 884 PCT</b>                                     | <b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416                 |   |
| International application No.<br><b>PCT/SE 2004/000390</b>                                       | International filing date (day/month/year)<br><b>17-03-2004</b> | Priority date (day/month/year)<br><b>25-03-2003</b> |
| International Patent Classification (IPC) or national classification and IPC<br><b>H04L27/26</b> |   |   |
| Applicant<br><b>Telia AB (publ) et al</b>  |   |   |

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
 

☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  
☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

|   |   |
|---|---|
| Date of submission of the demand<br><br><b>12-10-2004</b>   | Date of completion of this report<br><br><b>07-06-2005</b>                                |
| Name and mailing address of the IPEA/SE<br>Patent- och registreringsverket<br>Box 5055<br>S-102 42 STOCKHOLM<br>Facsimile No. +46 8 667 72 88 | Authorized officer<br><br><b>Peder Gjervaldsaeter/MN</b><br>Telephone No. +46 8 782 25 00 |

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2004/000390

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☐ the description:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the claims:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2004/000390

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

|                               |        |             |     |
|-------------------------------|--------|-------------|-----|
| Novelty (N)                   | Claims | <u>1-18</u> | YES |
|                               | Claims |             | NO  |
| Inventive step (IS)           | Claims | <u>1-18</u> | YES |
|                               | Claims |             | NO  |
| Industrial applicability (IA) | Claims | <u>1-18</u> | YES |
|                               | Claims |             | NO  |

## 2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: EP 1 014 639 A2

D2: Tonello, A.M. et al. "Analysis of the uplink of an asynchronous multiuser DMT OFDMA system impaired by time offsets, frequency offsets and multi-path fading"

D3: Patent Abstract Of Japan & JP 10 308716 A

D4: Patent Abstract Of Japan & JP 2001 069110 A

D5: Baum, K.L. "A synchronous coherent OFDM air interface concept for high data rate cellular systems"

The cited documents represent the general state of the art.  
The invention defined in claims 1-18 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed methods, communications system and transmitting and receiving device for control of the guard interval based on the geometric size of the cell in which the transmitting unit is located.

Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-18 is novel and is considered to involve an inventive step. The invention is industrially applicable.

However, the claims must be clear and concise and correspond with the invention revealed in the description (see further box VIII).

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**Claims 1, 16 and 18**

The term "the size of the cell" used in claims 1, 16 and 18 is vague and unclear and leaves the reader in doubt as to the meaning of the technical features to which it refers, thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT), i.e. the claims must specify the term "the size of the cell", make clear that the guard interval is controlled based on the geographical radius of the cell.

**Claim 11**

It is clear from the description on page 8, line 15 - page 9, line 10 that the following feature is essential to the definition of the invention:

(1) The guard interval is adjusted to the cell radius in which the transmitting unit is located.

Since independent claim 11 does not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

**Claims 1, 11, 16 and 18**

Further, claims 1, 11, 16 and 18 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempts to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem. The technical features necessary for achieving this result should be added, i.e. the claims must make clear how the guard interval is controlled by the cell radius. It is not enough to say that it is controlled, the claim must explain how it is controlled, i.e. explain the relation between the geographical cell radius and the guard interval.